II. CLAIM LISTING

Please cancel claims 1 - 5, 8, 16 - 19 without prejudice.

1-5 (Canceled)

6. (Currently Amended) [The railway track strength measurement system of claim 5,]

A railway track strength measurement system comprising:

an axle assembly having a first wheel and a second wheel, the wheels positioned to ride on railway track;

a first axle half connected to the first wheel and a second axle half connected to the second wheel;

the first and second axle halves being interconnected by an expansion device, the expansion device adapted to increase and decrease the distance between the first and second wheels and places a lateral load on the axle halves and track; and

the axle halves each including force sensors adapted to measure changes in lateral forces in the axle halves;

the compression device includes a hydraulic ram connected to the first axle half at a first end and to the second axle half at a second end;

the first and second axle halves are fixed and do not rotate with respect to the first and second wheels;

said first axle half includes a load measurement region;

the load measurement region is formed to define two opposed vertical recesses, with a solid portion positioned between the two recesses;

wherein the solid portion includes two apertures adapted to receive load cells.

7. (Previously Presented) The railway track strength measurement system of claim 6, wherein one of the load cells are positioned within the apertures to detect lateral forces with the axle halves.

8. (Canceled)

9. (Currently Amended) [The railway track strength measurement system of claim 8, wherein]

A railway track strength measurement system comprising:

an axle assembly having a first wheel and a second wheel, the wheels positioned to ride on railway track;

a first axle half connected to the first wheel and a second axle half connected to the second wheel;

the first and second axle halves being interconnected by an expansion device, the expansion device adapted to increase and decrease the distance between the first and second wheels and places a lateral load on the axle halves and track; and

the axle halves each including force sensors adapted to measure changes in lateral forces in the axle halves;

the first and second axle halves are connected to a pair of hydraulic cylinders, the hydraulic cylinders positioned to place a vertical load on the axle halves;

the axle halves each include force sensors adapted to measure changes in vertical forces in the axle halves.

10. (Previously Presented) A method for measuring track strength comprising the steps of:

positioning a track strength measuring device on a pair of railway rails, the rail strength measuring device having a pair of adjustable axle halves positioned between a pair of wheels;

placing the pair of axles under a substantially constant lateral load;

measuring force in a given region in each of the axle halves;

recording force from the given region in each of the axle halves;

measuring changes in track gauge from an unloaded to a loaded state; and

determining, based on changes in track gauge from an unloaded to a loaded state in combination with known loading forces, whether portions of the track are in need of repair.

11. (Previously Presented) The method for measuring track strength of claim 10, further including the step of comparing the measured track gauge under load to known standard values.

12. (Previously Presented) The method for measuring track strength of claim 11, further including the step of repairing the section of track that does not meet the known standard values.

13. (Previously Presented) A railway track strength measurement system comprising:

an axle assembly having a first wheel and a second wheel, the wheels adapted to ride on railway rails;

a first axle half connected to the first wheel and a second axle half connected to the second wheel;

the first and second axle halves being interconnected by a first hydraulic cylinder, the hydraulic cylinder adapted to place a lateral force on the axle halves;

the first axle half have being connected to a second hydraulic cylinder the second hydraulic cylinder adapted to place a vertical force on the first axle half;

the second axle half being connected to a third hydraulic cylinder, the third hydraulic cylinder adapted to place a vertical force on the second axle half;

the first and second axle halves each including load sensors adapted to measure changes in vertical and lateral forces within the first and second axle halves.

14. (Previously Presented) The railway track strength measurement system of claim 13 wherein the first and second axle halves are fixed and do not rotate with respect to the first and second wheels.

15. (Previously Presented) An axle continuous lateral and vertical force control system comprising:

first and a second axle halves each having a wheel, the wheels adapted to ride upon railway tracks;

each of the axles including force sensors adapted to measure lateral and vertical load on the axles;

a first hydraulic cylinder adapted to exert a lateral force on the axles, causing a lateral force to be applied to the railway tracks;

a second hydraulic cylinder adapted to exert a vertical force on the axles, causing a vertical force to be applied to the railway tracks;

a controller adapted to receive signals from the force sensors and adapted to react to variations in signals by making computations as to the force needed to counteract the variations in signals;

a hydraulic servo valve system adapted to receive signals from the controller and independently pressurize the hydraulic cylinders at a first end to independently decrease lateral or vertical load on the axles or to pressurize the hydraulic cylinders at a second end to independently increase lateral or vertical load on the axles, in response to variations in signals from the force sensors.

16-19. (Canceled)